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| APPLICATION NO.                        | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/993,268                             | 11/19/2001  | Aruna V. Ramanan     | POU999077US1        | 6335             |
| 46369                                  | 7590        | 05/17/2005           | EXAMINER            |                  |
| HESLIN ROTHENBERG FARLEY & MESITI P.C. |             |                      | DAVIS, CYNTHIA L    |                  |
| 5 COLUMBIA CIRCLE                      |             |                      | ART UNIT            |                  |
| ALBANY, NY 12203                       |             |                      | PAPER NUMBER        |                  |
|  |             |                      | 2665                |                  |

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/993,268 | <b>Applicant(s)</b><br>RAMANAN ET AL. |  |
|                              | <b>Examiner</b><br>Cynthia L Davis   | <b>Art Unit</b><br>2665               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/19/2001</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 6-8, 10-11, 15-17, 19-21, and 25-27 are rejected under 35

U.S.C. 102(b) as being anticipated by Huang.

Regarding claim 1, selecting a source node-destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes; selecting shortest routes between at least some S-D nodes of the group so that: selected routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; global balance of routes passing through links that are at the same level of the network is achieved is disclosed in figure 16 (showing routes that fan out and in) and column 10, lines 21-33 (listing routes between S and D) of Huang.

Regarding claim 10, means for selecting a source node-destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes; means for selecting shortest routes between at least some S-D nodes of the group so that: selected routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; global balance of routes passing through links that are at the same level of the network is achieved is disclosed in figure 16 (showing routes that fan out and in) and column 10, lines 21-33 (listing routes between S and D) of Huang.

Regarding claim 19, at least one computing unit adapted to select a source node-destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes; said at least one computing unit being further adapted to select shortest routes between at least some S-D nodes of the group so that: selected routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; global balance of routes passing through links that are at the same level of the network is achieved is disclosed in figure 16 (showing routes that fan out and in) and column 10, lines 21-33 (listing routes between computing nodes S and D) of Huang.

Regarding claim 20, a computer program storage device readable by a machine is disclosed in column 5, line 11 of Huang. Selecting a source node-destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes; selecting shortest routes between at least some S-D nodes of the group so that: selected routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; global balance of routes passing through links that are at the same level of the network is achieved is disclosed in figure 16 (showing routes that fan out and in) and column 10, lines 21-33 (listing routes between S and D) of Huang.

Regarding claims 2, 11, and 21, repeating said selecting of the S-D group for a plurality of S-D groups from the network, and for each S-D group, selecting the shortest routes between S-D nodes of the group so (a) and (b) are met, wherein links within the network that are at same level of the network have a substantially balanced number of

Art Unit: 2665

routes passing therethrough and are locally balanced is disclosed in Huang, column 9, lines 63-64 and figure 16 (showing the same number of routes going through each node).

Regarding claims 6, 15, and 25, repeating said selecting of the S-D group for each S-D group of the network, and wherein said selecting comprises substantially equalizing load on links within the network at a same level of network considering the selected routes passing through said links by the multiple S-D groups is disclosed in column 8, lines 1-5 of Huang.

Regarding claims 7, 16, and 26, selecting the shortest routes without prior knowledge of the type of data packages to be forwarded on said routes is disclosed in Huang, column 5, lines 34-38 (the system may be used for many different types of traffic; the type does not affect the system's functions).

Regarding claims 8, 17, and 27, selecting an S-D group with least one intermediate switch board (ISB) disposed between the common starting and ending sets of links of the network of interconnected nodes is disclosed in figure 16 of Huang (showing intermediate nodes between the start and end nodes).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2665

2. Claims 3-5, 12-14, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Kahale.

Regarding claims 3, 12, and 22, said selecting comprises exploring the network from a source node until a destination node is reached, and for each S-D pair of the group, prioritizing output ports at each stage based on least global weight of links on a node switch board (NSB), and by rank ordering output ports based on next level usage before prioritizing based on global weight of links on an intermediate switch board (ISB) is missing from Huang. However, Kahale discloses in column 2, lines 20-23, a system that prioritizes links based on their weights and schedules them accordingly (a scheduling system is the same as a route building system; it decides which packets are taking which route). It would have been obvious to one skilled in the art at the time of the invention to use the scheduling method of Kahale in the system of Huang. The motivation would be to have the system respond to transmission conditions in the transmission medium (Kahale, column 2, lines 10-13).

Regarding claims 4, 13, and 23, building the shortest routes between S-D nodes of the S-D group employing said prioritizing and said rank ordering is missing from Huang. However, Kahale discloses in column 2, lines 20-23, a system that prioritizes links based on their weights and schedules them accordingly (a scheduling system is the same as a route building system; it decides which packets are taking which route). It would have been obvious to one skilled in the art at the time of the invention to use the scheduling method of Kahale in the system of Huang. The motivation would be to

Art Unit: 2665

have the system respond to transmission conditions in the transmission medium (Kahale, column 2, lines 10-13).

Regarding claims 5, 14, and 24, said rank ordering comprises rank ordering output ports of the ISB such that ports with less traffic have a higher rank, and if more than one output port has a same rank, reordering the ranking so that an output port with a lower global weight on its link receives higher priority is missing from Huang. However, Kahale discloses in column 2, lines 20-24, the lowest weight links being scheduled first. It would have been obvious to one skilled in the art at the time of the invention to rank the lowest weight has higher priority. The motivation would be to route the traffic in the lowest-cost manner available.

3. Claims 9, 18, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Cwilich. Selecting said shortest routes by employing cross connected links within the ISB that are disjoint is missing from Huang. However, Cwilich discloses in column 25, lines 36-40 and 46-48, a service and restoration path being disjoint from one another. It would have been obvious to one skilled in the art at the time of the invention to use disjoint paths in the system of Huang. The motivation would be to have failures on one of the paths not affect the other paths.

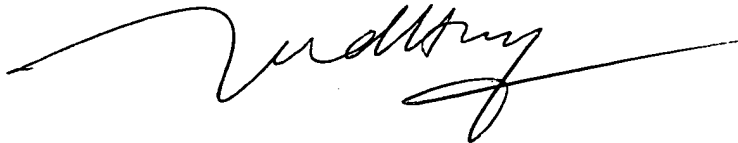
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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